



**BTA-8**

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Amplified Bass System

## **Application Guide**



Thank you and Congratulations

Congratulations on your purchase of a PowerBass Autosound speaker system. You now own a speaker of uncompromising design and engineering from a factory that truly believes in the relentless pursuit of perfection. Incorporating the highest quality parts and state-of-the-art materials, these speakers display the ultimate balance between high fidelity, performance and long-lasting reliability.



At PowerBass USA, Inc. we are confident you will have many years of outstanding enjoyment from this great SPEAKER investment. For maximum performance we recommend that you have your new PowerBass Autosound product installed by an Authorized PowerBass Autosound Dealer.

To learn more about PowerBass, please visit us on the World Wide Web at  
<http://www.powerbassusa.com>

Δ Warning Δ

Continuous exposure to sound pressure levels in excess of 100 dB can cause permanent hearing loss. PowerBass Autosound Speakers are capable of producing sound pressure levels well over 170 dB. Please observe all local sound ordinances while listening to your PowerBass Autosound system. PowerBass USA, Inc. accepts no liability for hearing loss, bodily injury, or property damage due to the result of use or misuse of this product.

## POWERBASS AMPLIFIED BASS SYSTEM FEATURES

**Built-in 150 Watt Amplifier:** Contains a high power Class A/B monaural amplifier complete with chassis mounted adjustable Gain, Low Pass Filter and Bass Eq controls for sonic integration into most existing factory or aftermarket car stereo systems and engineered perfectly to power the subwoofer.

**Remote Subwoofer Gain Control:** This wired remote functions as a Bass Boost and can provide 0-18dB of gain at 45Hz. The remote will not increase the output beyond the GAIN setting on the back of the amplifier. Supplied with XXft of cable it can reach your dash even when the BTA-8 is mounted in the trunk.

**Tunnel Port Design:** Large tunnel serves as a tuning port that "pushes" bass from the front loaded woofer for maximum output using a small footprint enclosure.

**Bass Reflex Single Port System:** For increased efficiency at low frequencies. The corner loaded design works to produce a concentrated bass output which is amplified by firing into hard surfaces giving the bass "kick" normally associated with much larger woofers.

**Polypropylene Cone with Rubber Surround:** A thermoplastic polymer cone was selected to help resist moisture and other elements while the rubber surround offers more excursion as well as protection against deterioration than other materials.

**BASV High Temperature Voice Coil:** These specially designed resin coated high temperature voice coils measure a full 1.5-inches in diameter to ensure high power handling and precise linear excursion while maximizing thermal heat dissipation.

**Adjustable Mounting Straps:** Two adjustable mounting straps are supplied to anchor the enclosure to your vehicle while allowing for easy removal if necessary.

**Additional Features:** Carpeted enclosure, acoustically transparent speaker grill, professional mounting hardware and wiring harness adds further value to your investment.

# SPECIFICATIONS FOR BTA SERIES SUBWOOFER SYSTEM

(Due to Constant Improvements, Specifications and Parameters are subject to change without notice.)

Model	Size	System Impedance	Frequency Response	Sensitivity 1W/1M	Magnet Size	Voice Coil Dia.	Amp Power RMS/Peak
BTA-8	Single 8"	4-ohm	35Hz-250Hz	95dB	40 oz.	1.5"	150W/300W

## UNPACKING THE ENCLOSURE

Every attempt has been made to transport your new PowerBass BTA subwoofer system safely. Carefully unpack the enclosure and inspect it thoroughly for any damage that may have occurred during shipping. Notify your local PowerBass dealer immediately should you notice any damage prior to installing the unit. Be sure to keep the carton and packing material until your system is operational. The original boxes will do the best job of protecting your speaker system if they need to be transported.

## INSTALLATION EXPERIENCE

Installation of PowerBass Autosound Speakers requires experience with a variety of mechanical and electrical procedures. This manual only provides general installation and operating instructions. If you have any reservations about your installation skills or lack the proper tools, please contact your local PowerBass Autosound dealer for assistance.

**IMPORTANT: This amplified subwoofer system is designed for operation in vehicles with 12-volt Negative ground electrical systems only.**

## ENCLOSURE PLACEMENT TIPS AND RECOMMENDATIONS

Your PowerBass Amplified Bass system must be properly placed in the vehicle for optimum performance. The output of the woofer needs to be "corner loaded" against the walls of the vehicle to produce the most bass (hard surfaces work best). Since the output of the woofer will be "corner loaded", the best location is likely to be to the front or rear corner of a trunk or luggage compart-

ment. However, don't be afraid to experiment with the placement as a little time and effort can have a great effect on the amount of bass produced. Below are some placement suggestions:

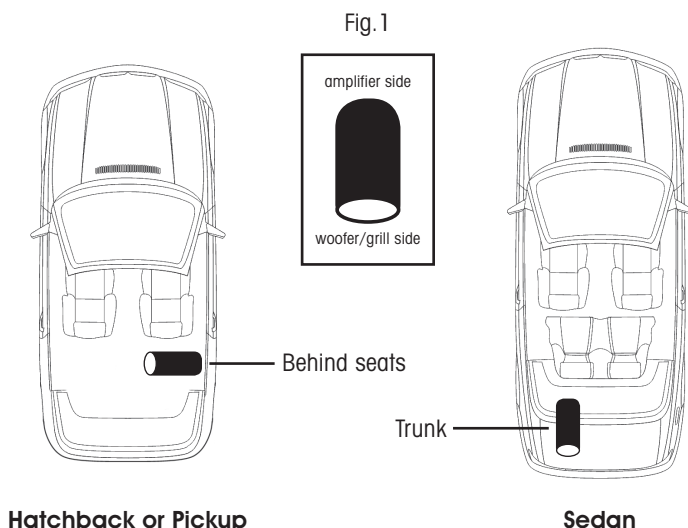
1) The amplifier end (opposite the woofer and grill end) should be facing into a corner. See the various configurations in Fig 1.

2) Ideally there should be several inches clearance between the amplifier and the corner it is pointing into. Make sure the open area (port) above the amplifier is not obstructed.

3) When all connections are made the final step should be to secure the enclosure using the mounting straps provided so it remains in place.

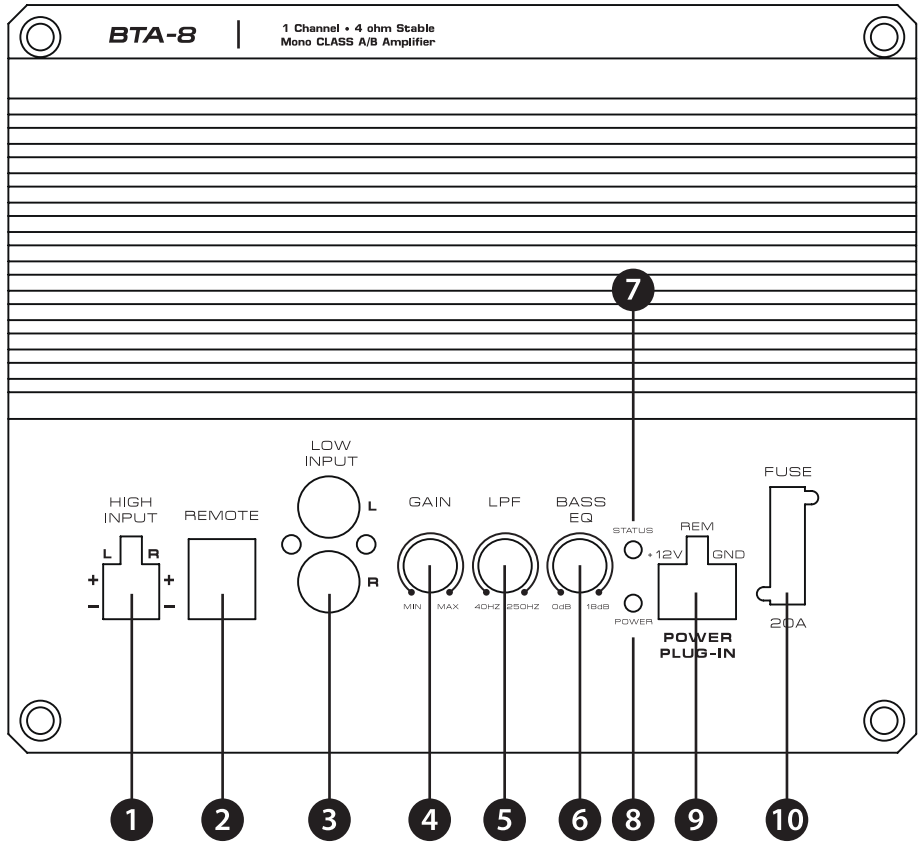
**WARNING:** Make sure where ever you choose to place the BTA-8 it's a dry location on a solid surface. Take care that none of the mounting screws will pierce any wiring harnesses, brake or fuel lines, the vehicles fuel tank, spare tire or any other parts of the vehicle. Some or all of these may be located behind or under the mounting surface.

**NOTE:** Due to the shifting and jarring that will occur in a vehicle, the mounting straps may stretch or loosen. It is recommended that you check the straps regularly to ensure the enclosure remains mounted securely.



# AMPLIFIER CONTROL PANEL LAYOUT

Fig.2



## 1. HIGH INPUT

Use this High Level 4-pin Molex style input when connecting to the speaker leads directly from a factory radio without the use of a low level convertor. Be sure to observe the correct speaker polarity (Do not use if you are using the LOW INPUT from the RCA jacks).

## 2. REMOTE Gain (RJ45 Jack)

This is the connector port for the BTA Remote Gain Control. Now the amplifiers secondary gain circuit can be adjusted from the driver's seat.

### 3. LOW INPUT (RCA) Jacks

These RCA style input jacks are for use with source units that have RCA line level outputs. A source unit with a minimum output of 500mV is required for proper operation. However, this input can accept levels up to 4Vrms.

### 4. GAIN Control

This control is used to match the sensitivity of the amplifier to the particular source unit (radio) that you are using up to 4 volts. Please note the GAIN control is not a volume control, it is a level match.

### 5. LPF (Low Pass Filter) Control

This filter allows low pass of frequency and is adjustable from 40Hz to 250Hz. A setting of 40Hz will produce only low frequencies (deep bass). A setting of 250Hz will allow the amplifier to produce a more punchy (higher) bass response.

### 6. BASS EQ Control

This equalization circuit is used to enhance the low frequency response of the vehicles interior. With up to 18dB of boost centered at 45Hz the Bass EQ can be adjusted to meet your own personal taste. Please note – by boosting the Bass EQ to its full +18dB you are asking the amplifier to work 10 times harder!

### 7. STATUS Indicator

This RED L.E.D. glows only when the built-in protection circuitry is activated. This indicates a problem with the system in relation to the amplifier and/or wiring (see Troubleshooting Tips).

### 8. POWER Indicator

This GREEN L.E.D. lights up when the power is on and the system is wired correctly.

### 9. POWER PLUG-IN Connector

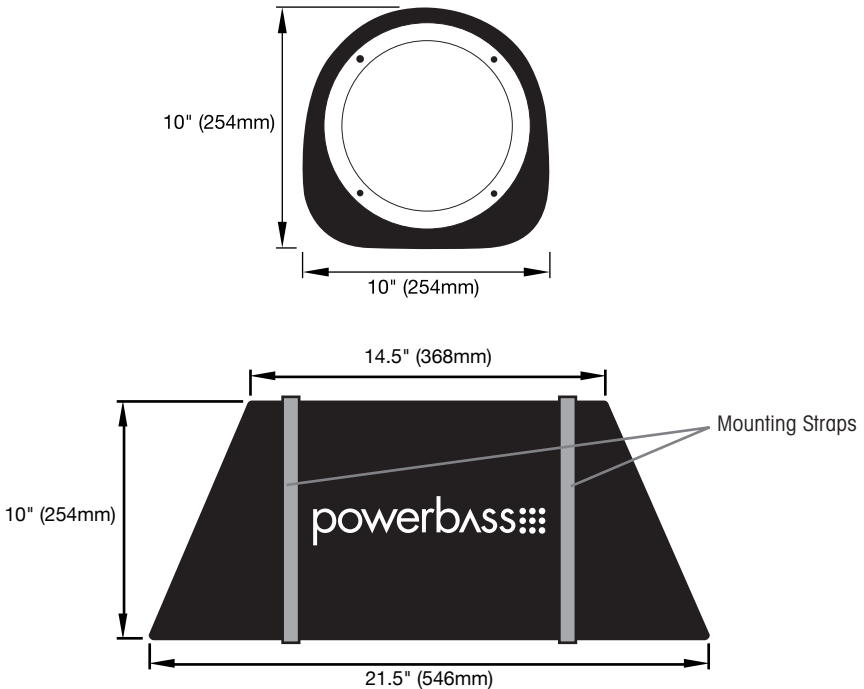
This 6-pin Molex style connector is where the wiring harness plugs in for the **power** (+12V), **ground** (GND) and **remote turn-on** (REM) wires.

### 10. FUSE 20A

For convenience the amplifier uses a common automotive ATC type fuse. For continued protection in the event a fuse blows, replace only with 20 Amp (Yellow ATC) fuse. Substitution or deletion of the fuse will void the product warranty and may cause damage to your car or the amplifier.

**CAUTION:** The power fuse on the amplifier chassis is to protect the amp against overdrive. To protect the vehicles electrical system, an additional fuse must be used within 18-inches of the battery on the +12V cable.

## ENCLOSURE DIMENSIONS AND SPECIFICATIONS



**NOTE:** The speaker system should be secured to protect the enclosure from moving. Before final mounting, be sure to check the sound one last time and make sure the enclosure is properly placed to produce the desired bass output. Use the two mounting straps provided and wrap them around the enclosure as shown in the drawing above—a strap should be placed on each side of the embroidered PowerBass logo to be most effective. Next secure the enclosure by screwing through the strap with the self-tapping screws provided, then tighten the straps.

When mounting in a trunk, try to make sure the enclosure is positioned in a manner that packages and luggage will not slide and hit the protective woofer grill.

In some cases where there is no flat or even mounting area, it may be necessary to use a wooden board to fasten the enclosure to and properly secure the mounting straps.



## POWER WIRING AND SIGNAL CONNECTIONS

### POWER CONNECTION

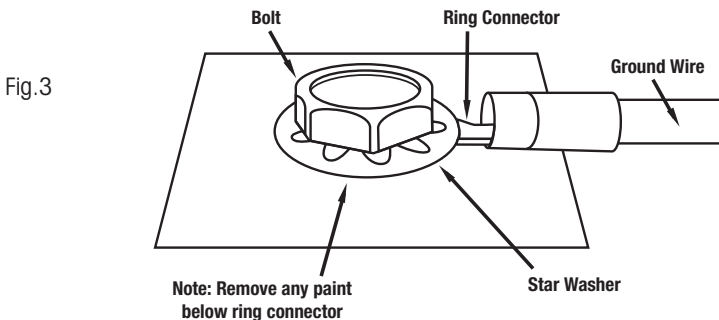
**Power Plug In** A 6-pin Molex style wiring harness has been supplied to wire up the Power, Ground and Remote Turn-on as follows:

**+12V** Connect the two twisted Red wires to 12 Volt positive. To lengthen the wire harness splice at least 12 gauge wire (10 gauge for runs longer than 10 feet) directly to the battery. Route the wire through a rubber grommet in the vehicles firewall. If there is no factory grommet available, you will need to install one.

**IMPORTANT—You MUST install a fuse holder with a 20A fuse in line with the power cable no further than 18-inches from the battery.**

**REM** Connect the single blue wire to the radio power antenna lead or remote output. This wire is responsible for turning the amplifier on and off. If the source unit (radio) is not equipped with a Remote lead you can connect this wire to an accessory or ignition point at the vehicle fuse block. In this type of installation, the amplifier will be on whenever the ignition is on. To lengthen this wire use at least 18 gauge wire and run it with exactly the same care and attention as the +12V power cable.

**GND** Connect the two twisted Black wires directly to the chassis of the vehicle. The length of these wires should be kept to an absolute minimum and should be terminated to bare metal using a ring terminal (see Fig 3). Should you need to lengthen the wire harness use the same gauge wire as was run for the positive 12 Volt connections as noted above.



**NOTE:** When lengthening any of the wire leads on the Power Plug-in it is recommended the wires be soldered and taped for optimum connection and to ensure against electrical shorts.

# INPUT SIGNAL (Choosing the High or Low Inputs)

The BTA-8 input signal connects to the head unit’s High Level (speaker wire) output OR Low Level (RCA) output—provided the radio is so equipped with Line Out. A dedicated subwoofer or low level signal will deliver the best performance. If unavailable use the high level inputs, as will be the case with most factory head units. (Note once you have chosen whether you will use the High Level or Low Level inputs follow the corresponding wiring diagrams on the following pages)

**NOTE:** Never use BOTH High and Low Level inputs at the same time. You must select one or the other!

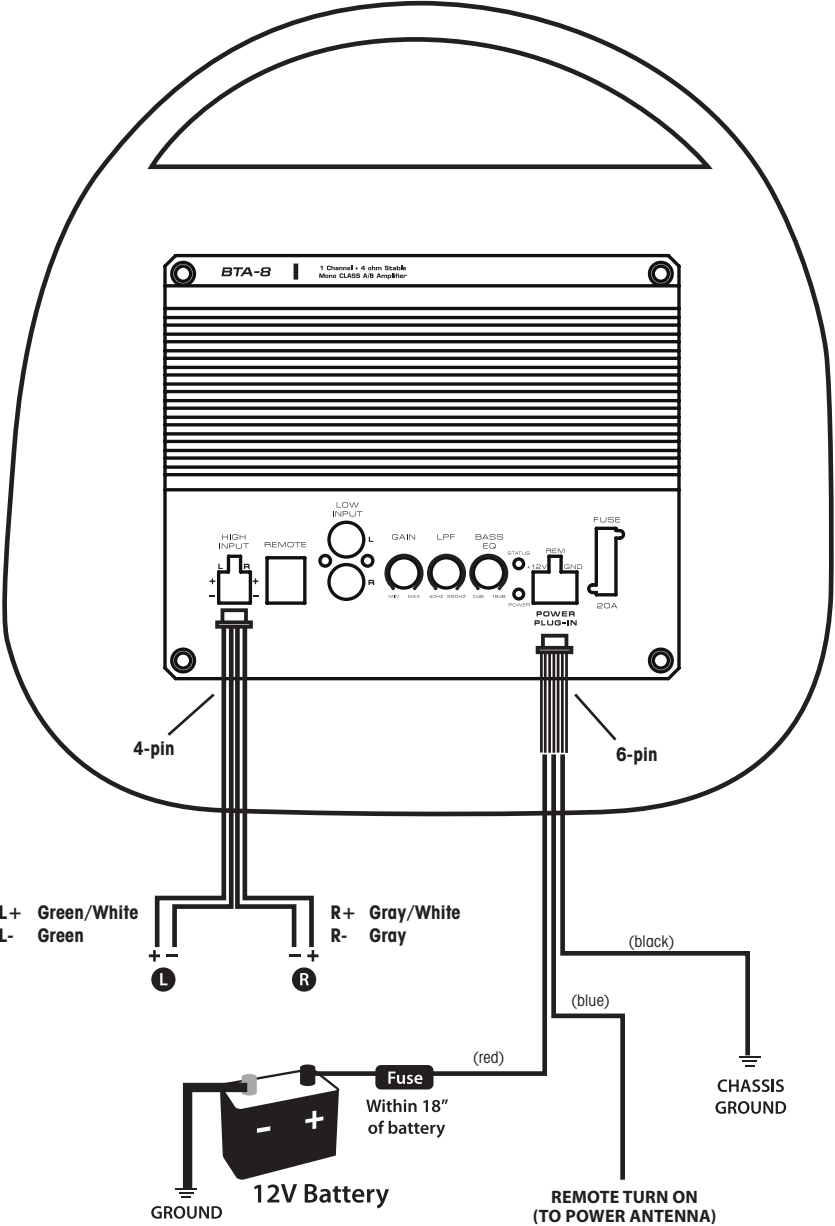
## High Level Input Connections (fig 4)

For radios with only speaker outputs (including most Factory source units). Using the 4-pin Molex style wiring harness provided, splice directly into the radio’s speaker outputs. Do not break the connection with the source (radio) and the speakers. Be sure to maintain proper speaker polarity.

<u>Wire Color</u>	<u>Connect to</u>
<b>Green w/ White stripe</b>	<b>Left +</b>
<b>Green</b>	<b>Left -</b>
<b>Gray w/ White stripe</b>	<b>Right +</b>
<b>Gray</b>	<b>Right -</b>

Another option is to tap off the existing front or rear full range speakers. Once again be sure to follow the correct polarity

Fig.4 High Level Connections

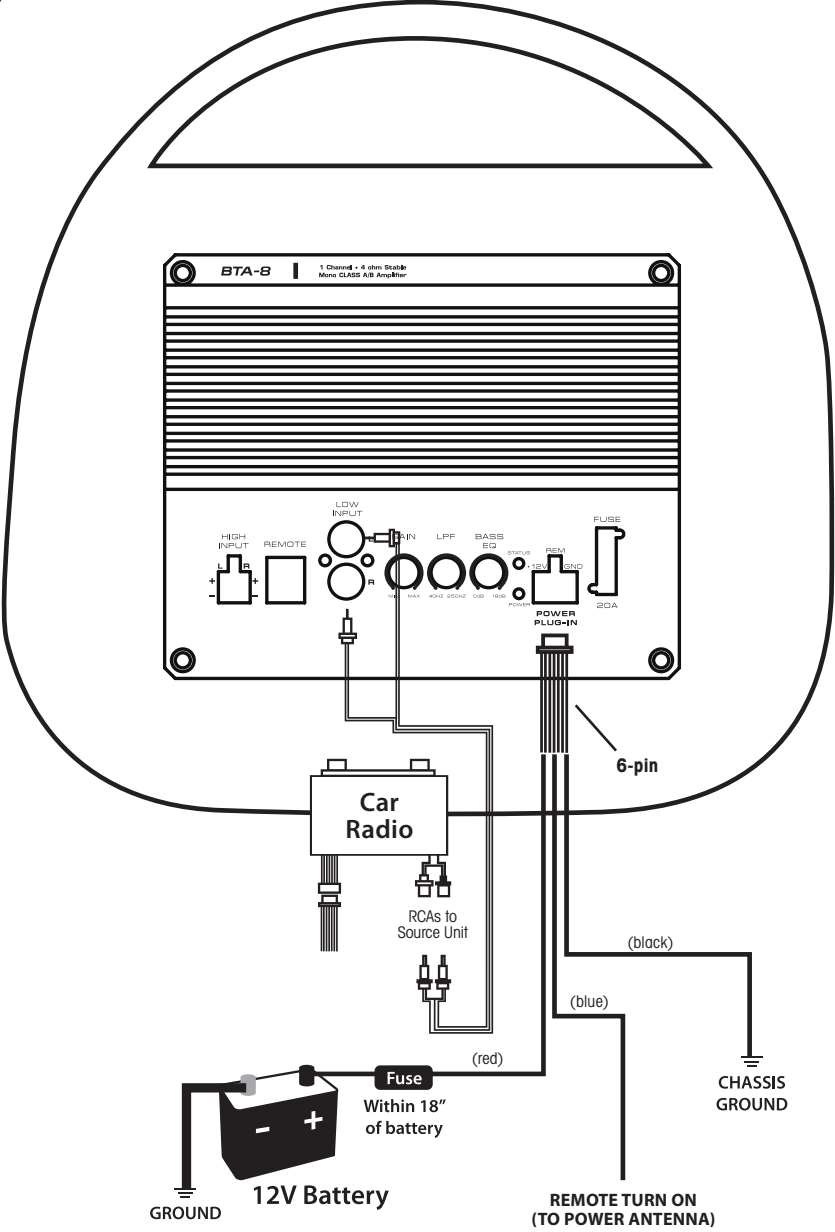


### **Low Level Input and RCA Interconnect Wiring (fig 5)**

For radios that have RCA line outputs. You will need to connect the low-level RCA style inputs from the BTA-8 to the line-outputs from the radio (source) via an RCA interconnect commonly called a "stereo patch cord". Choose the correct length and style of RCA interconnects for your needs. Always use high quality RCA audio cables (not supplied) for signal connections—those with multiple layers of shielding or a twisted pair variety for better noise rejection.

Be extra careful when routing your RCA audio interconnect cables. Car environments are notorious for poorly insulated wires. This means that hiss, engine noise and fan noise can be easily picked up through RCA cables if run incorrectly. Take care to make sure the power and audio signal are not on the same side of the vehicle and they do not cross each other.

Fig.5 Low Level Connections



## SET UP ADJUSTMENTS

Your BTA-8 uses several controls to provide sonic integration with virtually any vehicles unique acoustic properties. Please read the following section carefully to familiarize yourself with the function of each control.

The following adjustment sequence is recommended to properly tune your BTA-8. By first adjusting the GAIN, then the LPF, followed by the BASS EQ (in this order) will give you the best results.



Fig.6 GAIN Control

### Input GAIN Control

This control allows you to match the input level of the amplifier to the output level of your head unit (Fig 6). Matching the input can be accomplished in four simple steps:

1. Make sure the remote gain control is not plugged in until after the master gain control is set.
2. Set the GAIN control on the amplifier to MIN (completely counter clock wise).
3. Turn on the head unit and adjust the volume to 2/3 maximum, and set the BASS and TREBLE on the radio (source) to zero or flat.
4. Turn the GAIN control clockwise until the sound just begins to distort, then back off slightly to cut distortion and operate at optimum gain.

Remember, the GAIN control is not a volume control. Ignoring these four steps above may leave you with a damaged woofer and/or damaged amplifier.



Fig.7 Low Pass Control (LPF)

### LPF (Low Pass Filter) Crossover Adjustment

Since musical tastes vary, adjust the crossover by ear while listening to the music of your choice. Turn the crossover LPF adjustment all the way down to 40Hz. Then slowly turn the knob up until desired sound is achieved. Normal listening level should be right around 100Hz to 150Hz. Use

common sense when adjusting the crossover. When properly adjusted, the bass from the BTA-8 should blend in with the rest of your speakers and not overpower the music. Be sure to set the tone controls of your radio (source unit) to flat while dialing in the crossover. (Fig 7)



Fig.8 Bass EQ Control

### Bass EQ Adjustment

This special feature is designed to provide you with more powerful sound quality and it allows you to increase the Bass up to +18dB. Keep in mind that more is not always better. Adjusting the control to the MAX (18dB) position will stress the amplifier and the woofer which could result in damage. (Fig 8)

**NOTE:** Although this adjustment sequence will in most cases provide the best tuning results, the actual process may include several readjustments of each of the controls since their settings interact with each other. If necessary, consult your Authorized PowerBass dealer for help tuning your system.

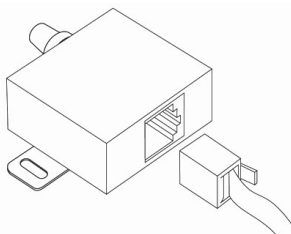


Fig.9 Connection with RJ45 Jack

### Remote Gain Controller

Your PowerBass BTA-8 includes a wired Remote Subwoofer Gain control module. It uses standard telephone wire and telephone RJ45 connectors. To connect the Remote Subwoofer Gain control to the amplified enclosure, simply insert one end of the telephone plug into the REMOTE gain port. Plug the other end into the back of the remote module. Mount the module within easy reach or under your dash. (Fig 9)

### Break In Period

To get the most from your woofer we recommend a "break-in" period of at least 40 hours (typically 2 weeks) at no more than 1/3 of maximum volume.

During this time the cone and spider assembly will gradually break in resulting in greater performance and more listening enjoyment.

## TROUBLESHOOTING TIPS

Problem	Solution
<b>Power LED not ON</b>	<p>With a Volt OHM Meter (VOM) check:</p> <ul style="list-style-type: none"> <li>• +12 Volt power terminal (should read +12 to +16VDC)</li> <li>• Remote turn-on terminal (should read +12 to +16VDC)</li> <li>• Ground Terminal</li> </ul>
<b>Power LED lights GREEN, no output</b>	<ul style="list-style-type: none"> <li>• Check RCA connections</li> <li>• Test speaker outputs with known good speaker</li> <li>• Substitute known good Source Unit</li> <li>• Check for signal on the RCA cable with VOM in AC position</li> </ul>
<b>Power LED lights GREEN, but volume reduces automatically.</b>	<ul style="list-style-type: none"> <li>• Advanced Protection Circuitry is engaging due to high internal temperature of the amplifier. Amplifier requires more air flow around the chassis. If this continues choose a better ventilated mounting location.</li> <li>• High operating temperature can be caused by incorrect input sensitivity level. Reset the GAIN control.</li> </ul>
<b>Red Status Protection LED is ON, no output and</b> <b>1. Amp is VERY HOT</b>  <b>2. Amp shuts down ONLY when the vehicle is running</b>  <b>3. Amp plays at very low volume</b>	<ul style="list-style-type: none"> <li>• Thermal protection is engaged. Check for proper impedance at speaker terminals. Also check for adequate air flow around the amplifier.</li> <li>• Voltage protection engaged. Voltage to the amp is not within the 10-16 VDC operating range. Have the battery/charging system inspected.</li> <li>• Short circuit protection is engaged. Check for speaker wires shorted to each other or the vehicle chassis. Speakers operating below the minimum impedance can cause this to occur.</li> </ul>
<b>Alternator noise (varies with RPM)</b>	<ul style="list-style-type: none"> <li>• Check for damaged RCA cable.</li> <li>• Check routing of RCA cable</li> <li>• Check Source Unit for good ground</li> <li>• Check amp gain setting, turn down if set too high</li> </ul>
<b>Poor Bass Response</b>	<ul style="list-style-type: none"> <li>• Check speaker polarity, reverse the connection of one speaker only.</li> </ul>



## WE WANT YOU LISTENING FOR A LIFETIME

Dear Customer,

Selecting fine audio equipment such as the speakers you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. PowerBass and the Consumer Electronics Association (CEA) want you to get the most out of your equipment by playing at a safe level. One that lets the sound come through loud and clear without annoying, blaring or distortion- and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

PowerBass and the CEA want you to listening for a lifetime!



## WARRANTY NOTES

Should a warranty issue arise with our amplified subwoofer system PowerBass will replace the defective woofers only. Do not send the entire enclosure, unless the enclosure or amplifier is defective itself. PowerBass does not warranty the cosmetics of the enclosure once installed in the vehicle.



**Product Disposal** – Certain international, national and/or local laws and/or regulations may apply regarding the disposal of this product. For further detailed information, please contact the retailer where you purchased this product or the PowerBass Importer/Distributor in your country.

# POWERBASS AUTOSOUND LIMITED WARRANTY POLICY

PowerBass USA, Inc. offers limited warranty on PowerBass products under normal use on the following terms:

**PowerBass Autosound Speakers are to be free of defects in material and workmanship for a period of one (1) year.**

This warranty applies only to PowerBass products sold to consumers by Authorized PowerBass Dealers in the United States of America. Products purchased by consumers from a PowerBass dealer in another country are covered only by that country's Distributor and not by PowerBass USA.

This warranty covers only the original purchaser of PowerBass product. In order to receive service, the purchaser must provide PowerBass with the receipt stating the consumer name, dealer, product and date of purchase.

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at PowerBass's discretion and will not be liable for incidental or consequential damages. PowerBass will not warranty this product under the following situations:

- **Amplifiers received with apparent rust or corrosion**
- **Any evidence of liquid damage or exposure to excessive heat**
- **Abuse such as holes in the cone, surround or ripped spider**
- **Voice coil damage due to amplifier clipping or distortion**
- **Product that has not been installed according to this owners manual**

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for PowerBass any other liability in connection with the sale of this product.

**Please call (909) 993-5399 for PowerBass Customer Service.** You must obtain an RA# (Return Authorization Number) to return any product to PowerBass. **The RA number must be prominently marked on the outside of the shipping carton or the delivery will be refused.** Please pack your return carefully; we are not responsible for items damaged in shipping. Return the defective product along with a copy of the original dated retail sales receipt, plus \$12.00 for handling and diagnostic evaluation to:

**PowerBass USA, Inc., Attn: Returns (RA# \_\_\_\_\_)**  
**13936 Mountain Avenue, Chino, CA 91710**

Residents of HI, AK and US territories will be charged for return shipping. All inquiries regarding service and warranty should be sent to the above address.



PowerBass Autosound – A division of PowerBass USA, Inc.

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**[www.powerbassusa.com](http://www.powerbassusa.com)**